

## REMARKS

Applicant submits the following remarks to further obviate the 35 U.S.C. §§ 102 and 103 rejections as set forth in the Office Action dated March 27, 2003.

The Examiner has rejected claims 2, and 4-13 under 35 U.S.C. §102(b) as being anticipated by Good body et al., Jovanovics et al., Conrad et al. (1979), or Conrad et al. (US Patent No. 4,199,504). Applicant submits that only the *Catharanthus* plant and seed of the present invention with the novel disease resistance gene produces polymeric and trimeric alkaloids. These polymeric or trimeric alkaloids are produced in living cells or tissues and are the direct metabolic result of gene expression in living plants. The references cited do not disclose any trimer alkaloids. Further, the cited references (Good body et al., Jovanovics et al., Conrad et al. (1979), and Conrad et al. (US Patent No. 4,199,504) do not disclose the existence of any naturally occurring alkaloids other than monomeric or dimeric forms. Accordingly, withdrawal of this rejection is respectfully requested.

The Examiner has rejected claims 2, and 4-13 under 35 U.S.C. §103(a) as being unpatentable over Good body et al., Jovanovics et al., Conrad et al. (1979), or Conrad et al. (US Patent No. 4,199,504). Applicant submits that none of the references cited (Goodbody et al., Jovanovics et al., Conrad et al. (1979), and Conrad et al. (US Patent No. 4,199,504) teach or disclose the trimeric and polymeric alkaloids claimed in the patent application. The cited references (as well as many other publications) discuss alkaloids found in *Catharanthus roseus* (formerly known as *Vinca rosea*). By now, several thousand research publications have reported on alkaloids contained in all *Catharanthus* species, including *C. Roseus*. A large number of these publications describe intensive analyses of all alkaloids that could be isolated from available *Catharanthus* plant material using state-of-the-art methodology within the purview of skilled artisans. None of these resources have described or inferred the existence of naturally occurring trimeric or polymeric alkaloids. Alkaloid constituents in *Catharanthus* have been purified in exquisite detail, both

is just one example of the in-depth analyses of chemical structure and alkaloid variety found in *Catharanthus roseus*. Yet, despite this extensive research effort, none of these studies have ever isolated or described alkaloid trimers or polymers in the plant material that was available for study.

The U. S. Patent of Bowman, *Phytophthora* resistance gene of *Catharanthus* and its use (No. 5,491,285) describes the entirely unique mutant gene that results in disease resistance in *Catharanthus*. As described in the patent, the resistance gene was not found in any *Catharanthus* germplasm, except that described in and now protected by the patent. As a part of the research leading to this current patent application, alkaloids were studied from disease resistant genetic material (isolated from plants containing the resistance gene) and all other available non-resistant genetic sources. Trimeric and polymeric alkaloids were only isolated from plant material containing the resistance gene of the '285 patent. It was found that the novel mutant gene causing disease resistance also results in the within-plant synthesis of the novel trimeric and polymeric alkaloids claimed in the present invention. Accordingly, withdrawal of this rejection is respectfully requested.

In view of the above amendments and remarks, it is submitted that the claim satisfies the provisions of 35 U.S.C. §§102 and 103 and is not obvious over the prior art. Reconsideration of this application and early notice of allowance is requested.

RESPECTFULLY SUBMITTED,					
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